Claims:

1. Air supply device for obtaining zones of clean air in premises, said air supply device (1) comprising at least one air permeable body (11) including at least one inner and at least one outer part (12, 13) of which the inner part (12) consists of or includes porous material,

c h a r a c t e r i z e d i n

that at least one fan device (22) is provided to bring air (A), which is to be supplied to the premises (2), to flow through the air permeable body (11) at low air velocity,

that at least one device (23) is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2),

that the air permeable body (11), in cross section, has the shape of parts of a circle or substantially a circle or primarily parts of a circle or substantially a circle, and

that the outer part (13) has passages (16) which are substantially rectilinear, substantially uniform in thickness and located close to each other, said passages (16) further having a length (L) which is at least four times greater than their width (B) in order to generate rectilinear and uniformly distributed partial air streams (6a).

2. Air supply device according to claim 1, c h a r a c t e r i z e d i n that the length (L) of each passage (16) is 4-10 times greater than their width (B).

3. Air supply device according to claim 2, c h a r a c t e r i z e d i n that the length (L) of each passage (16) is 4-6 times greater than their width (B).

4. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n

that the passages (16) have a circular or substantially circular cross section, and

that they have the same or substantially the same diameter along their entire length (L).

5. Air supply device according to any preceding claim, characterized in that all or almost all passages (16) are of equal length.

6. Air supply device according to any preceding claim, characterized in that the passages (16) are defined by tubes (17) which are located close to each other and connected to each other.

7. Air supply device according to claim 6, characterized in that the tubes (17) are made of a plastic material.

8. Air supply device according to claim 6, characterized in that the tubes (17) are made of a metallic material.

9. Air supply device according to claim 6, characterized in that the tubes (17) are made of a ceramic material.

10. Air supply device according to any of claims 6-8, characterized in that the tubes (17) are interconnected by fusing.

11. Air supply device according to any preceding claim, characterized in that the porous material (14) of the inner part (12) is designed to permit filtration of air flowing through said porous material in order to obtain a low content of particles in the premises (2).

12. Air supply device according to any preceding claim, characterized in that the porous material (14) of the inner part (12) consists of foamed plastic with open cells.

13. Air supply device according to any preceding claim, characterized in that the outer part (13) is thicker than the inner part (12).

14. Air supply device according to any preceding claim, characterized in that the outer part (13) consists of a heat resistant material.

15. Air supply device according to any preceding claim, characterized in that the inner and outer parts (12, 13) are connected to each other.

16. Air supply device according to any preceding claim, characterized in that the body (11) is in cross section shaped as a semicircle or substantially as a semicircle.

17. Air supply device according to any of claims 1-15, characterized in that the air permeable body (11) is in cross section shaped as a quarter of a circle or substantially as a quarter of a circle.

18. Air supply device according to any of claims 1-15, characterized in that the air permeable body (11) is shaped as a spherical segment or as a substantially spherical segment.

19. Air supply device according to any preceding claim, characterized in that the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is provided to supply air at such temperature that said air descends to a low level in the premises (2).

20. Air supply device according to any preceding claim,

wherein impure air is gathered in an upper zone (18) closest to the ceiling (9) of the premises (2), and

wherein at least one air outlet (19) for impure air is provided at the ceiling (9) of the premises (2),

characterized in

that the air permeable body (11) is located beneath the upper zone (18) such that substantially no impure air is coejected out of the upper zone (18) by the air streams (6) discharged by the air permeable body (11).

21. Air supply device according to any preceding claim, characterized in that the air permeable body (11) is located above a door (20) to the

premises (2) and it is elongated and extends along at least a part of the width of the door (20).

22. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is a device for taking in cool air and/or includes a cooling device or is a cooling device for cooling air.

AMENDED CLAIMS

[received by the International Bureau on 09 December 2004 (09.12.04);
original claims 1-22, replaced by amended claims 1-22]

1. Air supply device for obtaining zones of clean air in premises, said air supply device (1) comprising at least one air permeable body (11) including at least one inner and at least one outer part (12, 13) of which the inner part (12) consists of or includes porous material,

wherein at least one fan device (22) is provided to bring air (A), which is to be supplied to the premises (2), to flow through the air permeable body (11) at low air velocity,

wherein at least one device (23) is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), and

wherein the air permeable body (11), in cross section, has the shape of parts of a circle or substantially a circle or primarily parts of a circle or substantially a circle,

c h a r a c t e r i z e d i n

the combination that the inner part (12) consists of or includes porous material and the outer part (13) has passages (16) which are substantially rectilinear, substantially uniform in thickness and located close to each other, said passages (16) further having a length (L) which is at least four times greater than their width (B) in order to generate rectilinear and uniformly distributed partial air streams (6a) for making a turbulent zone (7a) around the clean-air zone (7) more narrow so that the turbulence around the clean-air zone (7) hereby becomes less.

2. Air supply device according to claim 1, c h a r a c t e r i z e d i n that the length (L) of each passage (16) is 4-10 times greater than their width (B).

3. Air supply device according to claim 2, c h a r a c t e r i z e d i n that the length (L) of each passage (16) is 4-6 times greater than their width (B).

4. Air supply device according to any preceding claim, characterized in

that the passages (16) have a circular or substantially circular cross section, and

that they have the same or substantially the same diameter along their entire length (L).

5. Air supply device according to any preceding claim, characterized in that all or almost all passages (16) are of equal length.

6. Air supply device according to any preceding claim, characterized in that the passages (16) are defined by tubes (17) which are located close to each other and connected to each other.

7. Air supply device according to claim 6, characterized in that the tubes (17) are made of a plastic material.

8. Air supply device according to claim 6, characterized in that the tubes (17) are made of a metallic material.

9. Air supply device according to claim 6, characterized in that the tubes (17) are made of a ceramic material.

10. Air supply device according to any of claims 6-8, characterized in that the tubes (17) are interconnected by fusing.

11. Air supply device according to any preceding claim, characterized in that the porous material (14) of the inner part (12) is designed to permit filtration of air flowing through said porous material in order to obtain a low content of particles in the premises (2).

12. Air supply device according to any preceding claim, characterized in that the porous material (14) of the inner part (12) consists of foamed plastic with open cells.

13. Air supply device according to any preceding claim, characterized in that the outer

part (13) is thicker than the inner part (12).

14. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the outer part (13) consists of a heat resistant material.

15. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the inner and outer parts (12, 13) are connected to each other.

16. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the body (11) is in cross section shaped as a semicircle or substantially as a semicircle.

17. Air supply device according to any of claims 1-15, c h a r a c t e r i z e d i n that the air permeable body (11) is in cross section shaped as a quarter of a circle or substantially as a quarter of a circle.

18. Air supply device according to any of claims 1-15, c h a r a c t e r i z e d i n that the air permeable body (11) is shaped as a spherical segment or as a substantially spherical segment.

19. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is provided to supply air at such temperature that said air descends to a low level in the premises (2).

20. Air supply device according to any preceding claim,

wherein impure air is gathered in an upper zone (18) closest to the ceiling (9) of the premises (2), and

wherein at least one air outlet (19) for impure air is provided at the ceiling (9) of the premises (2),

c h a r a c t e r i z e d i n

that the air permeable body (11) is located beneath the upper zone (18) such that substantially no impure

air is coejected out of the upper zone (18) by the air streams (6) discharged by the air permeable body (11).

21. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the air permeable body (11) is located above a door (20) to the premises (2) and it is elongated and extends along at least a part of the width of the door (20).

22. Air supply device according to any preceding claim, c h a r a c t e r i z e d i n that the device (23) which is provided to see to that the air (A) supplied to the premises (2) has a lower temperature than the air in said premises (2), is a device for taking in cool air and/or includes a cooling device or is a cooling device for cooling air.